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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/681,515 | 10/08/2003 | James P. DeYoung | 5697-62 | 9658 |
| 20792 | 7590 | 06/06/2005 | EXAMINER | |
| MYERS BIGEL SIBLEY & SAJOVEC PO BOX 37428 RALEIGH, NC 27627 | | | TALBOT, BRIAN K | |
| | | | ART UNIT | PAPER NUMBER |

1762

DATE MAILED: 06/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 10/681,515 | Applicant(s) DEYOUNG ET AL. | |
| | Examiner Brian K. Talbot | Art Unit 1762 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 33-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 7 and 33-37 is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The amendment filed 3/22/05 has been considered and entered. Claims 8-32 have been canceled. Claims 33-37 have been added. Claims 1-7 and 33-37 remain in the application.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

3. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carbonell et al. (US 6,083,565).

Carbonell et al. discloses a method of coating a substrate (including electronic components such as circuit boards or semiconductor articles) comprising the steps of providing the substrate in an enclosed vessel, at least partially filling the enclosed vessel with a solution comprising a first supercritical fluid and a coating component so that the fluid contacts the surface of the substrate; and then withdrawing the substrate into a separate compressed gas atmosphere, the second compressed gas atmosphere having a density less than the first supercritical fluid, such that the boundary moves across the substrate surface and a thin film of coating component is deposited on said substrate (col. 1, lines 39-514 col. 6, lines 16-32).

Carbonell et al. teaches a step of withdrawing the substrate from the first supercritical fluid into the second compressed gas atmosphere, instead of displacing the first supercritical fluid with the compressed gas atmosphere. It is the Examiner's position that the displacement of

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one surrounding fluid with one another versus moving the substrate itself from one surrounding fluid to another is not a patentable variation.

It would have been obvious for one having ordinary skill in the art to have displaced the fluid atmosphere of the first supercritical fluid with the compressed gas atmosphere in place of withdrawing the substrate from the supercritical fluid to the compressed gas atmosphere in the process of Carbonell et al. with the expectation of similar and successful results, in the absence of a showing of criticality, because both displacing atmospheres and moving the substrates are equivalent relative movements with respect to the substrate surface and would yield the same results.

With respect to claim 3, it is noted that the closed vessel in the method of Carbonell et al. is partially filled with both the supercritical fluid and compressed gas throughout the process.

As to claims 4 and 6, Carbonell et al. discloses a pressure in the vessel in the range of 10-10,000 psi (col. 6, lines 21-32). Overlapping ranges are prima facie evidence of obviousness. It would have been obvious to one having ordinary skill in the art to have selected the portion of Carbonell et al.'s pressure range that corresponds to the claimed range. In re Malagari, 184 USPQ 549 (CCPA 1974). As to the temperature, Carbonell et al. is silent with regard to the temperature of the fluids.

It would have been obvious for one having ordinary skill in the art to have determined the optimum temperature such that the first fluid is in a supercritical phase and the second phase remains a compressed gas through routine experimentation in the absence of a showing of criticality. It is well settled that determination of optimum values of cause effective variables such as these process parameters is within the skill of one practicing in the art. In re

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Boesch, 205 USPQ 215 (CCPA 1980).

As to claim 5, Carbonell et al. teaches that the first supercritical fluid and separate compressed gas atmosphere may both be carbon dioxide (col. 6, lines 21-32). Carbonell et al. discloses overlapping coating thicknesses in col. 3, lines 21-35. It would have been obvious for one having ordinary skill in the art to have selected the portion of Carbonell et al.'s coating thickness range that corresponds to the claimed range. In re Malagari, 184 USPQ 549 (CCPA 1974).

Response to Amendment

4. Applicant's arguments filed 3/22/05 have been fully considered but they are not persuasive.

Applicant argued that the Examiner's position concerning the displacement of one surrounding fluid with one another versus moving the substrate itself from one surrounding fluid to another is not a patentable variation as one skilled in the art would have had a reasonable expectation of similar success is not convincing.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**


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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K. Talbot whose telephone number is (571) 272-1428. The examiner can normally be reached on Monday-Friday 6AM-3PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Brian K Talbot
Primary Examiner
Art Unit 1762

BKT